



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/518,937	03/06/2000	Ajay Divakaran		8894

7590

01/11/2006

Patent Department
Mitsubishi Electric Information Technology Center
America Inc
201 Broadway
Cambridge, MA 02139

EXAMINER

NGUYEN, MAIKHANH

ART UNIT

PAPER NUMBER

2176

DATE MAILED: 01/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/518,937

Applicant(s)

DIVAKARAN ET AL.

Examiner

Maikhanh Nguyen

Art Unit

2176

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>10/20/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is responsive to communications: RCE filed 11/21/2005 to the original application filed 03/06/2000.
2. Claims 1-13 are currently pending in this application. Claim 1 has been amended. Claim 1 is independent claim.

Request Continuation for Examination

3. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/21/2005 has been entered.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Art Unit: 2176

5. Claims 1-13 are rejected under 35 U.S.C. 101 because the claimed invention, appearing to be appear to require any computer hardware to implement the claimed invention. These claims appear to define the metes and bounds of an invention comprised of software alone. There is no support (i.e., explicitly claimed computer hardware) in the body of claim 1 to support the “apparatus” of the preamble. Likewise, the “system” of the preamble of claim 1 appears to be a system comprised entirely of software. Software alone, without a machine, is incapable of transforming any physical subject matter by chemical, electrical, or mechanical acts. Therefore, the claimed invention is directed to non-statutory subject mater.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Yeo et al.** (US 5,821,945, issued 10/1998), as cited in the Applicant's IDS.

As to claim 1

- a. Yeo teaches a method for ordering multimedia content (*see the Abstract*), comprising the steps of:
 - (i) segmenting the multimedia content to extract objects (*col.2, lines 35-47*);
 - (ii) extracting (*col.4, lines 62-col.5, line 2*) and associating features of the objects to produce content entities (*col.3, line 21-col.4, line 57*), wherein the content entities are recursive data structures comprising features (*col.9, lines 42-56*), relations (*col.5, line 64-col.6, line 11*), directed acyclic graphs (*col.4, lines 36-58*);
 - (iii) coding the content entities to produce directed acyclic graphs of the content entities, each directed acyclic graph representing a particular interpretation of the multimedia content (*col.5, lines 3-52*);
 - (iv) measuring attributes of each content entity (*col.6, lines 24-31*); and
 - (v) assigning the measured attributes to each corresponding content entity in the directed acyclic graphs (*col.6, line 51-col.8, line 7*) to rank order the multimedia content (*col.10, lines 39-32 and see figs. 4-5*).
- b. Yeo does not specifically teach the use of containment sets. Yeo, however, discloses “interrelated shots”.
- c. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have applied Yeo’s teaching to include “*containment sets*” because it would have provided the capability for identifying both visual and temporal relationships to allow the user to recognize the underlying story structure and navigate to the desired point in the video.

As to claim 2

Yeo teaches the measured attributes include intensity attributes (*col.7, line 35-col.8, line 8*).

As to claim 3

Yeo teaches the measure attributes include direction attributes (*col.7, lines 13-19*).

As to claim 4

Yeo teaches the measured attributes include spatial attributes (*col.9, line 42-col.10, line 7*).

As to claim 5

Yeo teaches the measured attributes include temporal attributes (*col.9, line 42-col.10, line 7*).

As to claim 6

Yeo teaches the measured attributes are arranged in an increasing rank order (*col.5, line 65-col.6, line 11 and col.10, lines 32*).

As to claim 7

Yeo teaches the measured attributes are arranged in an decreasing rank order (*col.5, line 65-col.6, line 11 and col.10, lines 32*).

As to claim 8

Yeo teaches traversing the multimedia content according to the directed acyclic graph (*col.3, line 24- col.4, line 10*) and the measured attributes assigned to the content entities (*col.6, line 24-col.8, line 7*).

As to claim 9

Yeo teaches summarizing the multimedia content according to the directed acyclic graph (*col.9, lines 19-42*) and the measured attributes assigned to the content entities (*col.6, line 24-col.8, line 7*).

As to claim 10

Yeo teaches the multimedia content is a three dimensional video sequence (*col.7, lines 12-19*).

As to claim 11

Yeo teaches nodes of the directed acyclic graphs represent the content entities and edges represent breaks in the segmentation, and the measured attributes are associated with the corresponding edges (*col.5, lines 37-52*).

As to claim 13

Yeo teaches a summary of the multimedia is a selected permutation of the content entities according to the associated ranks (*col.9, lines 19-42*).

As to claim 12

Yeo teaches at least one secondary content entity is associated with a particular content entity, and wherein the secondary content entity is selected during the traversing (*col.2, lines 35-48 and col.6, lines 1-21*).

Response to Arguments

7. Applicants' arguments filed 11/21/2005 have been fully considered but are moot in view of the new ground(s) rejection.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


- Arman et al. U.S. Patent No. 5,521,841 issued: May 28, 1996
- Kim U.S. Patent No. 5,673,369 issued: Sep. 30, 1997
- Yeo et al. U.S. Patent No. 5,708,767 issued: Jan. 13, 1998
- Ratakonda U.S. Patent No. 5,956,026 issued: Sep. 21, 1999
- Friedman et al., *"Image Segmentation in video sequences: A probabilistic approach"*, Computer Science Division, 1997, pp. 1-13.
- Divakaran et al., *"Report on Validation Experiment on Ordered Relation Graphs"*, December 1999, pp. 1-14.
- Yeo et al., *"Time-constrained Clustering for Segmentation of Video into Story Units"*, IEEE Proceedings of ICPR'96, pp. 375-380, 1996.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maikhanh Nguyen whose telephone number is (571) 272-4093. The examiner can normally be reached on Monday - Friday from 9:00am – 5:30 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Heather Herndon can be reached at (571) 272-4136.
- The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2176

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MN


HEATHER R. HERNDON
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100